


Introduction: The Bureau of Labor Statistics (BLS) Consumer Price Index (CPI) measures the changes in prices people pay for goods and services. BLS produces both average price data, as well as price indexes. The difference between the two is: average prices are recorded in dollars, and price indexes show the change in price since a reference period. An index is a tool that simplifies the measurement of movements in a numerical series. That is, BLS sets the average index level (representing the average price level)—for

the 36-month period covering the years 1982, 1983, and 1984—equal to 100. BLS then measures changes in relation to that figure. An index of 110, for example, means there has been a 10-percent increase in price since the reference period; similarly, an index of 90 means a 10-percent decrease. Movements of the index from one date to another can be expressed as changes in index points (simply, the difference between index levels), but it is more useful to express the movements as percent changes. This is because changes in index points tell us how prices changed relative to the base level. In contrast, percent changes allow us to express the change in prices between two periods of time. This activity is intended to demonstrate BLS data being used in the classroom. BLS data provide a real-world example of data that can be graphed. In this activity, students will graph 12-month percent changes to show the movement in prices over previous years.

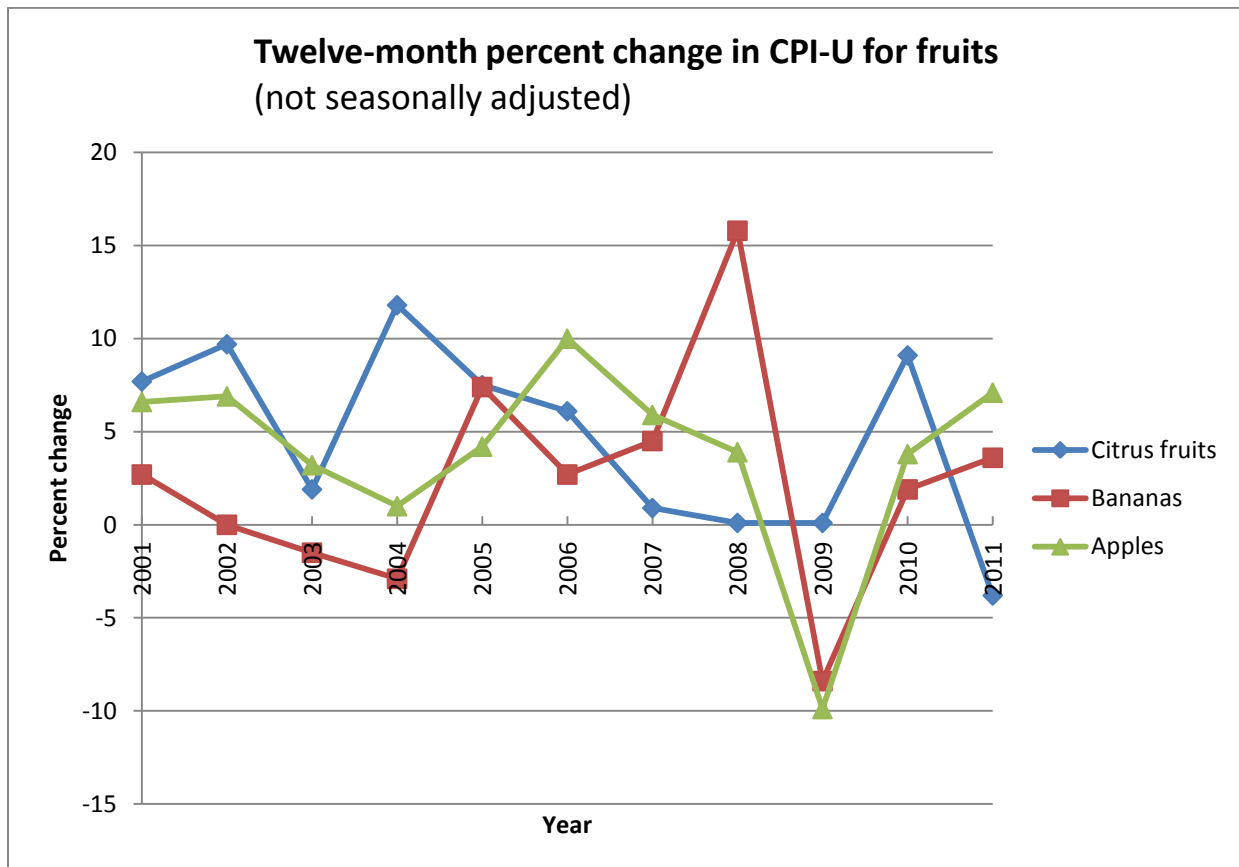
Activity: This activity uses real-world data to reinforce graphing fundamentals. Each student should graph three or more percent changes on the same graph. They may choose to graph similar items (examples: Men's Apparel, Women's Apparel, and Footwear) or unrelated items (examples: carbonated drinks, computer software and accessories, and admission to movies, theatres, and concerts) that they are interested in. This activity uses real-world data to reinforce graphing fundamentals. Students should properly label and title the graph, provide a scale, and be able to describe the meaning of the graph. This activity can also be completed with graphing calculators, Microsoft Excel, or other software to produce graphs. Students can download data tables into Microsoft Excel using the  [.xls](#) icon above each database generated table.

Directions:

1. Use the one-screen data search tool, Consumer Price Index - *All Urban Consumers (current series)* (<http://data.bls.gov/pdq/querytool.jsp?survey=cu>)
2. Choose the area that you want to view data for. (For the largest selection of items, choose "U.S. City Average.")
3. Select the items you wish to view price index levels for.
4. Be sure the "Not Seasonally Adjusted (<https://www.bls.gov/cpi/cpisapage.htm>)" option is selected, and the "Seasonally Adjusted" option is not.
5. Select "Add To Your Selection."
6. Select "Get Data."
7. Graph the index levels for several items on one graph.

8. Select the “More Formatting Options” button above the data table.
 - a. Uncheck the “Original Data Value” box, and check the “12-Month Percent Change” box.
 - b. Select the radio button “Select one time period:” and choose “December” to view year-over-the-year percent changes.
 - c. Select the “Retrieve Data” button.
9. Plot your results on a graph. Compare the changes in prices over time for each item, and compare general trends across all items chosen. Discuss why you think these items may have experienced price changes.

Students may graph using the graph paper at the end of the activity or by using graphing software. Remind students of the elements of a graph: title, time period, labels on both axes, and scale on both axes. The graph should have a caption at the bottom, showing the source of the data. (In this instance, Source: Bureau of Labor Statistics, CPI-U.) Students graph the average prices of goods over time and discuss reasons prices may change over time. After the students have finished their graphs, ask them to share with the class.



NOTE: CPI-U is the index for All Urban Consumers.

SOURCE: U.S. Bureau of Labor Statistics.

Chart Data:

<http://data.bls.gov/timeseries/CUUR0000SEFK01>, <http://data.bls.gov/timeseries/CUUR0000SEFK02>,
<http://data.bls.gov/timeseries/CUUR0000SEFK03>

Additional Resources: For more information about the CPI, students should read, “How BLS Measures Changes in Consumer Prices”: <https://www.bls.gov/cpi/cpifact2.htm> and the Consumer Price Index Frequently Asked Questions (FAQs): <https://www.bls.gov/cpi/cpifaq.htm>

